SOUTH FLORIDA WATER MANAGEMENT DISTRICT

AGENDA

SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD)
WATER RESOURCES ADVISORY COMMISSION (WRAC)
Lake Okeechobee Committee Meeting

Wednesday, September 30, 2009, 9:00 AM
Indian River State College - Okeechobee Campus
2229 NW 9th Avenue
Okeechobee, FL 34972

1.	Welcome and Introductions - Kevin Powers, Chair	10m
2.	Member Issues	20m
3.	Water Conditions Update - Cal Neidrauer, Chief Engineer, Operations Control Dept., SFWMD	15p 15d
4.	Lake Ecology Update - Dave Unsell, Director, Lake Okeechobee Div., SFWMD	15p 15d
5.	Northern Everglades and Estuaries Protection Program Update - Pinar Balci, Ph.D., Northern Everglades Lead Technical Program Specialist, Everglades Restoration and Capital Projects, SFWMD	30p 30d
	See supporting document: NEEPPUpdate_notes.pdf	
•	Public Comment	15m
6.	Working Lunch - 12:15	30m
7.	Dispersed Storage and Treatment Update	
	A. Dispersed Storage and Treatment Overview - Benita Whalen, Deputy Department Director, Regulation, SFWMD	
	B. Florida Ranchlands Environmental Services Project Update - Sarah Lynch, Director, Agriculture, World Wildlife Fund	
	C. Wetland Reserve Program Update- John Winfree, Senior Field Representative, The Nature Conservancy	
	D. Wrap Up - Benita Whalen, Deputy Department Director, Regulation, SFWMD	45p 30d

8. WRAC Issues Workshop on Adaptive Protocols for Lake Okeechobee - Status Update: Susan Gray, Ph.D., Dep. Director, Watershed Mgt. Dept., SFWMD 15p 30d

- Public Comment 15m

9. Adjourn: 2:45 p.m

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1

2. Member Issues 20m

2

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30p 30d

See supporting document: NEEPPUpdate_notes.pdf

- Public Comment 15m

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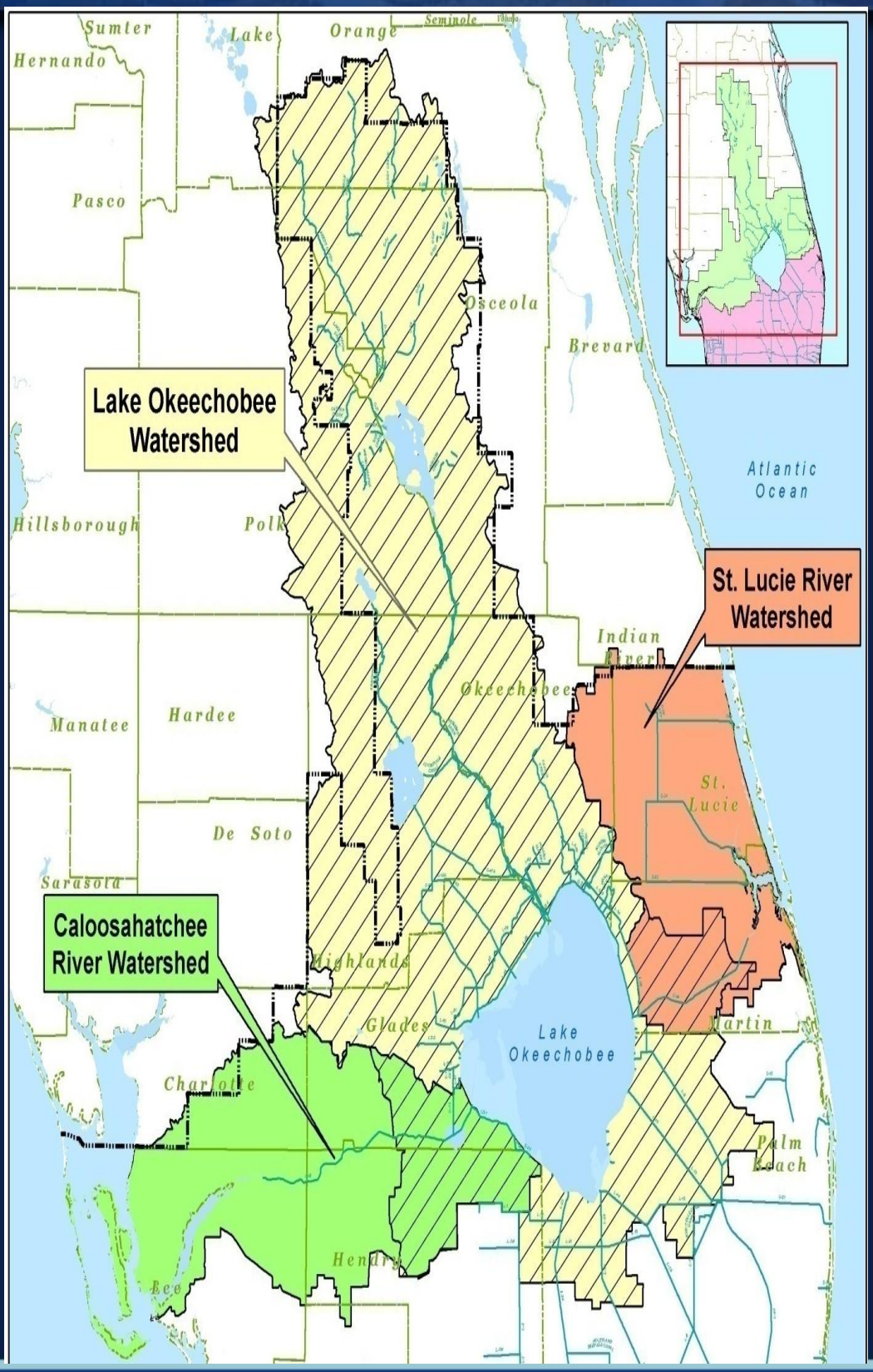
Northern Everglades and Estuaries Protection Program Update

WRAC Lake Okeechobee Committee Meeting- 09/30/09

Pinar Balci, Ph.D – Northern Everglades Technical Program Specialist

The Northern Everglades



Lake Okeechobee Protection Plan Update

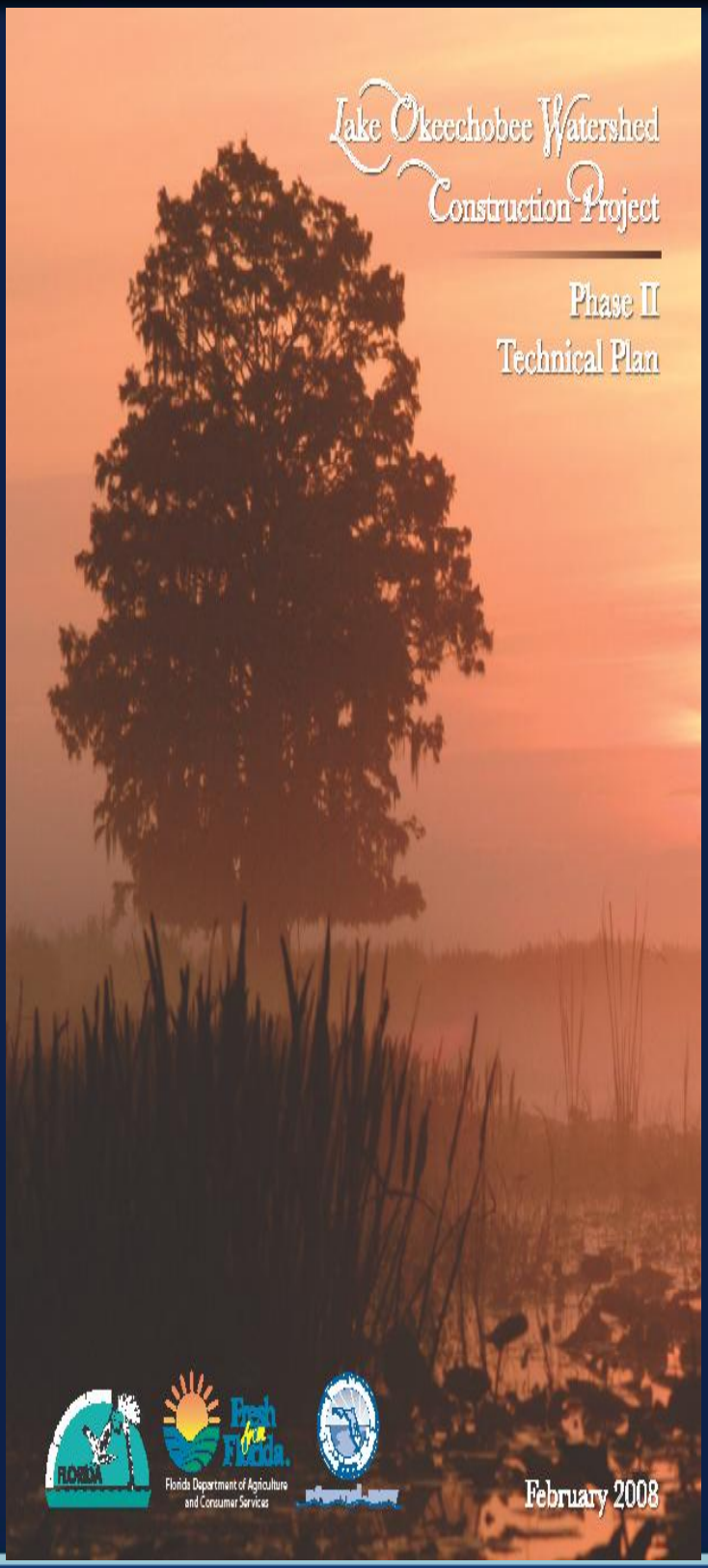
I. Pollutant Control Program

II. Construction Project

III. Research and Water Quality Monitoring Program

Lake Okeechobee Phase II Technical Plan

- Delivered to Legislature on February 1, 2008
- No action was taken during session- therefore plan is deemed approved and may be implemented
- Plan implementation (Process Development & Engineering) is moving forward
- Three- year Plan update due in early 2011

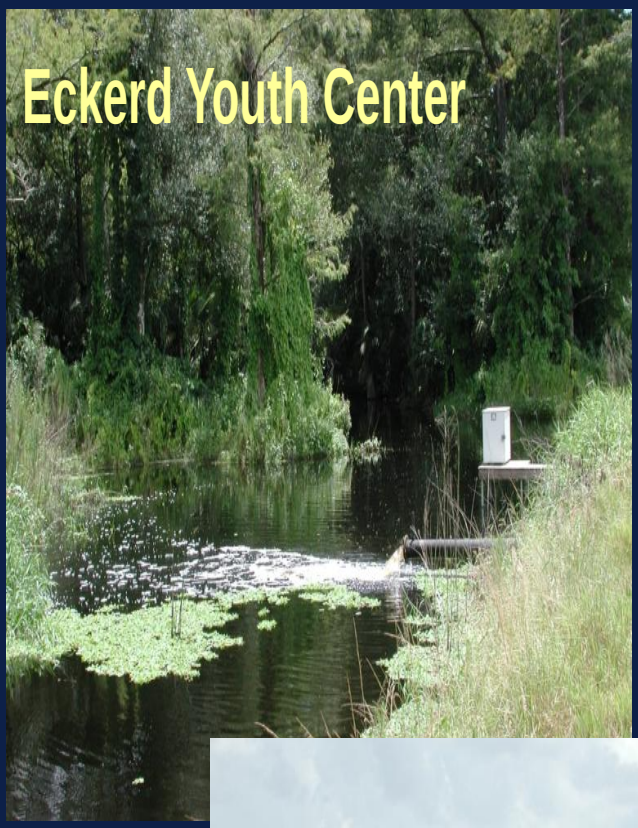


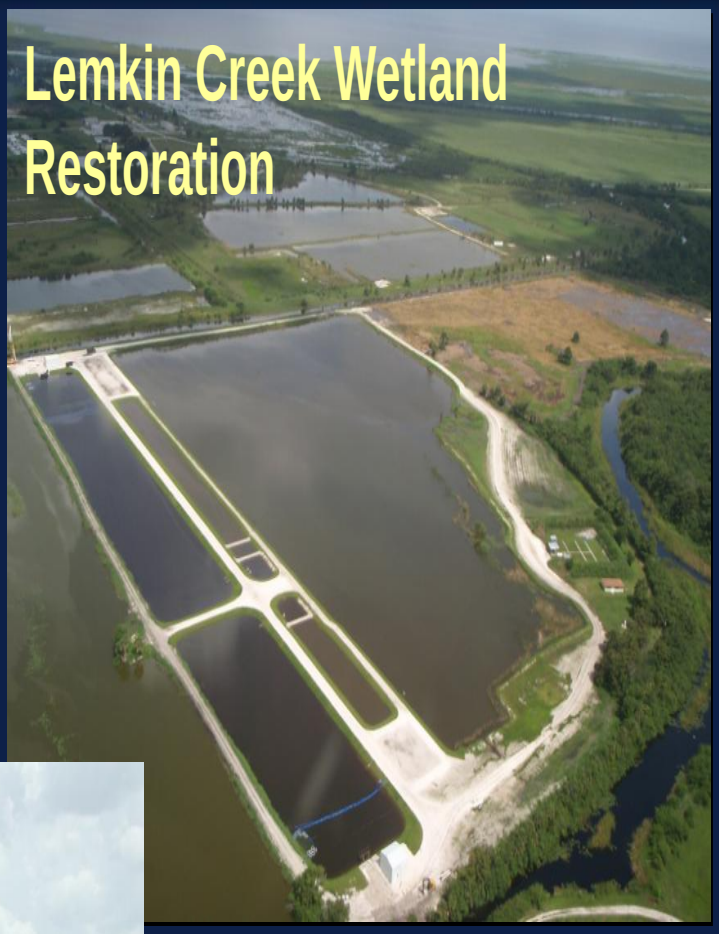
Pollutant Control Program

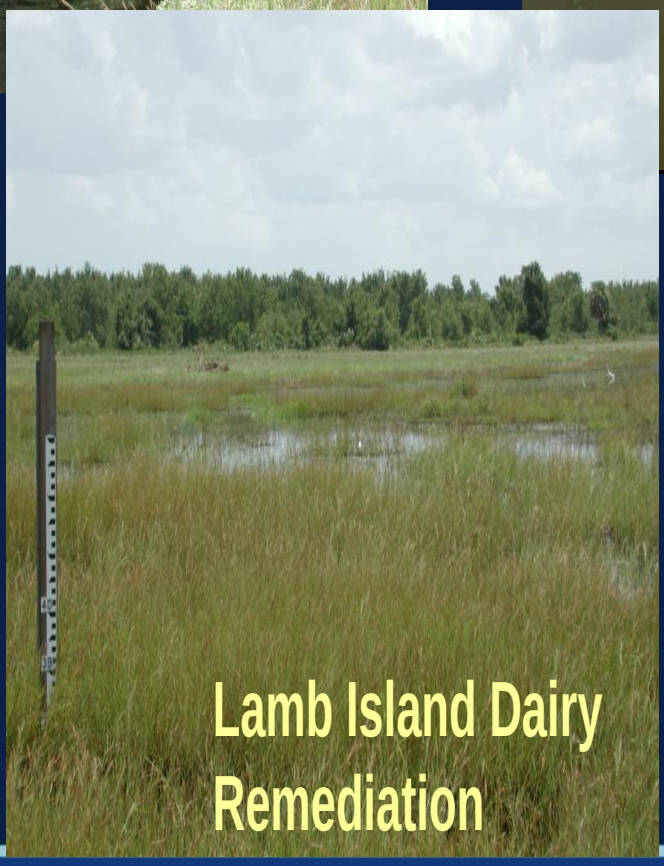
- Implementation of agricultural and urban BMPs
- Revisions to regulatory programs
  - Environmental Resource Permit (ERP) Program
    - Statewide Stormwater Rule- Water Quality (FDEP)
    - Northern Everglades ERP Basin Rule- Water Quantity (SFWMD)
  - District's Source Control Program Regulatory Rule (Chapter 40E-61)
    - Works of the District Regulatory Phosphorus Source Control Program

Pollutant Control Program

SFWMD Phosphorus Control Program







Construction Project
Lake Side Ranch STA

- Project is designed in two phases:
  - *Phase 1:* STA- North, S-650 pump station and canal improvements
  - *Phase 2:* STA-South and S-191A pump station
- Phase I construction is underway
- Phase II design is underway; construction is contingent on additional funding

Construction Project
Fisheating Creek Feasibility Study

- Fisheating Creek- selected due to challenges associated with this portion of the Lake Okeechobee watershed
- Objective:
  - Improve hydrology and water quality through storage and treatment features
- Feasibility Study has two-phases:
  - Phase I: Included investigation of available information and work plan development- completed in March 2009

Construction Project
Fisheating Creek Feasibility Study (Con't)

- Phase II: Includes alternative formulation, evaluation and selection; compilation of results and write-up of the report- kicked off in May 2009
- Current activities:
  - Refinement of Phase II Technical Plan targets for storage and water quality
  - Modeling:
    - Refining WAM simulations for pre-drainage and existing
  - Outreach program development
    - Greater landowner participation

Construction Project
Chemical Treatment Study

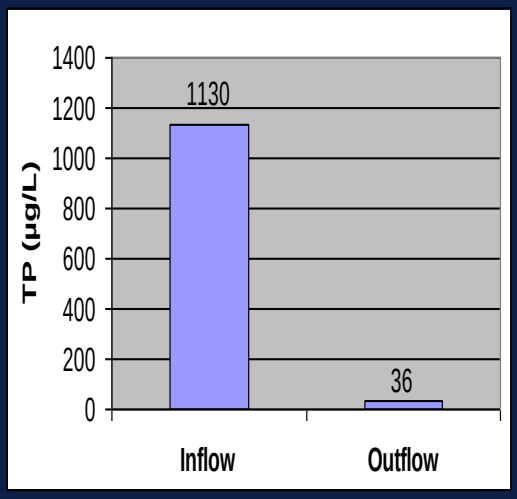
- Designed to investigate available information on chemical treatment technologies that have been tested to reduce TP loads in stormwater runoff and identify technologies appropriate for use in the Northern Everglades
- Phase I: Literature review was completed in July 2009
  - Summarizes latest information on chemical treatment methods and potential Northern Everglades applications
- Phase II: Site identification and potential implementation

Construction Project
Hybrid Wetland Treatment Technology

- Original four sites (Nubbin Slough, Mosquito Creek, Larson 8, and Ideal Grove) continue operation and optimization activities while providing phosphorus concentration reductions ranging from 60 – 90%.
- Cost effectiveness and P load reduction information will be provided in the Year 2 final report due in November.
- FY09 sites constructed at Lemkin Creek (Wolff Ditch and FDOT Ditch) are substantially complete and treating base flows of 4 cfs.
- FY10 funding will be used for continued operation of the existing 6 sites and construction of up to 2 new sites.

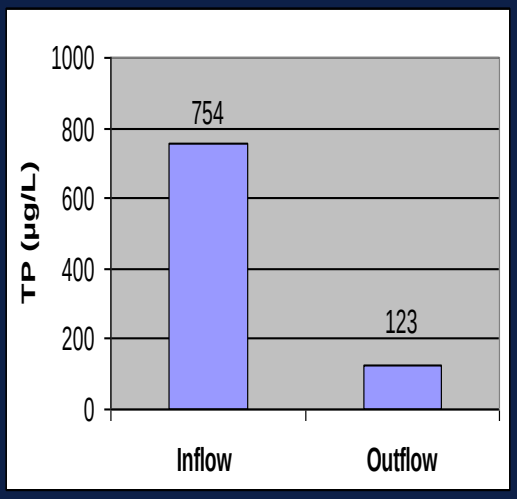
Construction Project
Hybrid Wetland Treatment Technology (Con't)

Mosquito Creek



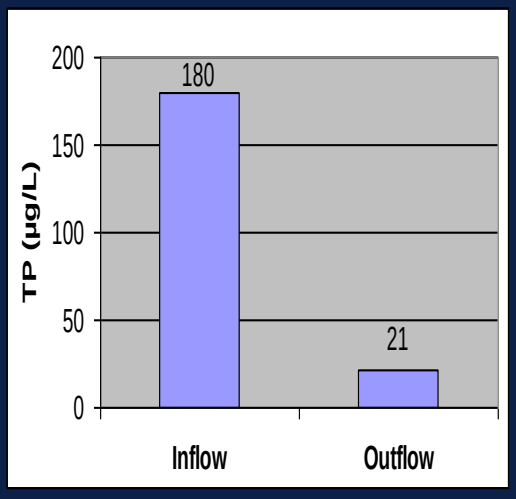
Mean P removal performance, Feb – July 2008

Nubbin Slough



Mean P removal performance, Feb – July 2008

Ideal 2 Grove



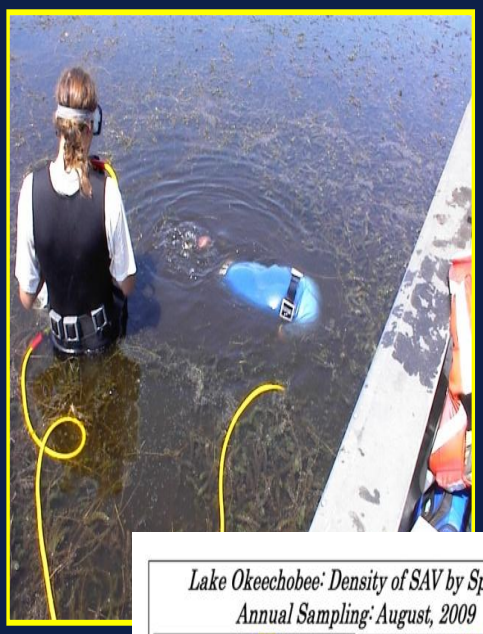
Mean P removal performance, March – July 2008

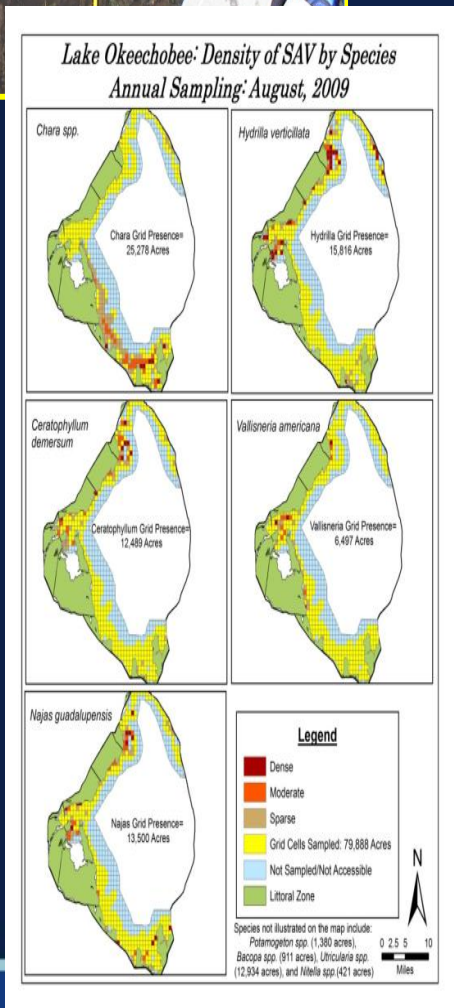
Dispersed Storage and Treatment

- Originated as Lake Okeechobee and Estuary Recovery Initiative in 2005
  - Included as management measures in LO Phase II Technical Plan and River Watershed Protection Plans
- Primary goals: water retention, load reduction and/or hydrologic restoration
- Dispersed Storage and Treatment Program development is underway
  - Address outstanding items (technical, legal, permitting, etc.)
  - Establish process for solicitation, evaluation and selection of projects

Research and Water Quality Monitoring Projects

- Lake Okeechobee in-Lake Assessment Projects
  - Submerged Aquatic Vegetation
  - Algal Bloom and Toxin
  - Routine Plankton Monitoring
  - Periphyton Research
  - Native Plant Re-vegetation
  - Ecological Data Management System





Research and Water Quality Monitoring Projects

- Sub-basin Monitoring Network (USGS)
- Exotics and Nuisance Species Control
- LO Water Quality Model
- LO Environment Model

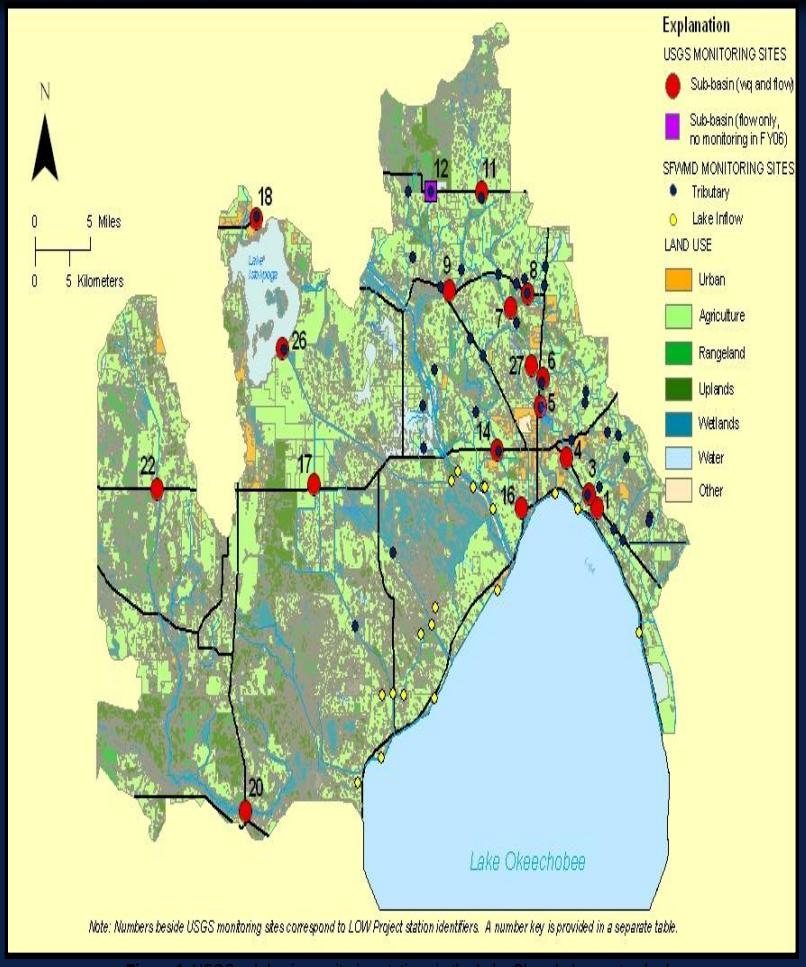
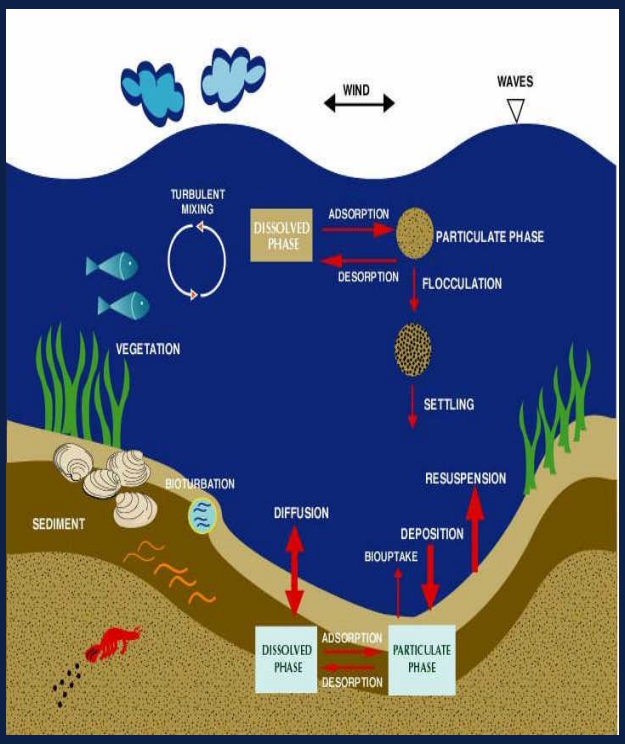


Figure 1. USGS sub-basin monitoring stations in the Lake Okeechobee watershed.



Caloosahatchee and St. Lucie River Watershed Protection Plans Update

I. Pollutant Control Program

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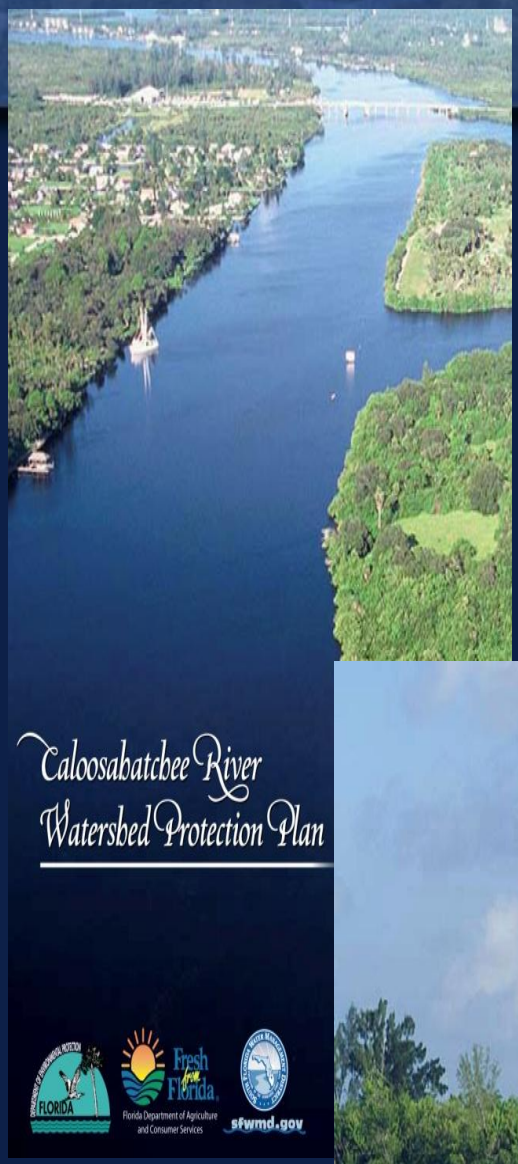
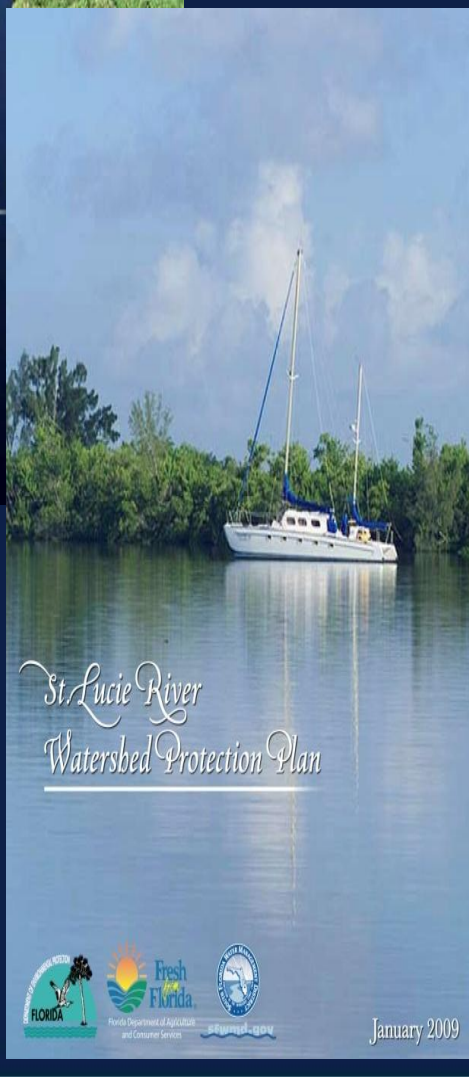
River Watershed Protection Plans

- Final Plans submitted to the Legislature on Jan 1, 2009
- Legislature took no action on the plans during the 2009 legislative session, hence the plans are deemed approved and may be implemented
- RWPPs will provide the basis for FDEP's BMAP development





Pollutant Control Program

- Implementation of agricultural and urban BMPs
- Revisions to regulatory programs
  - Environmental Resource Permit (ERP) Program
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- District's Source Control Program Regulatory Rule (Chapter 40E-61)
  - Establishment of River Watershed Nutrient Source Control Programs

Pollutant Control Program

- Nutrient Source Control Programs- include following phases:
  - Water quality monitoring
  - Data management and assessment
  - BMP effectiveness performance measure development
  - Rule making and adoption
  - Rule implementation
- The first four phases are expected to be completed by the end of FY2012, followed by rule implementation
  - Multiple tasks requiring staff resources as well as funding in future fiscal years in order to progress into the implementation phase

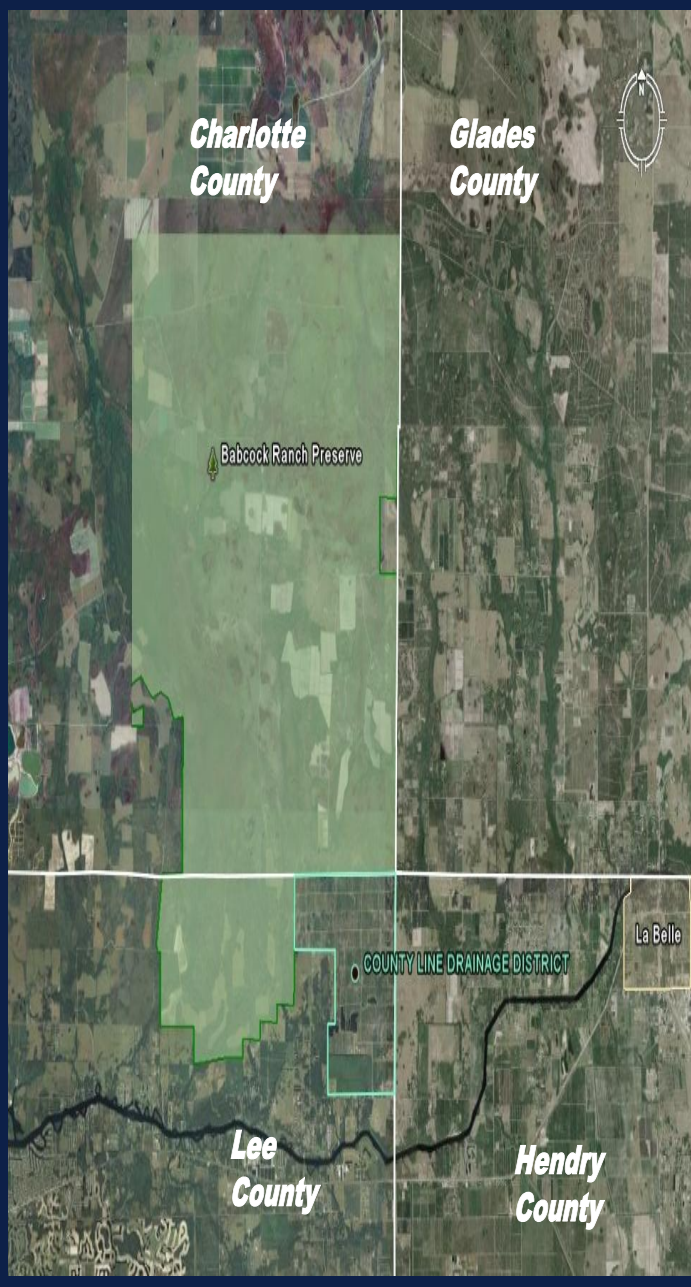
Construction Project

C-43 Water Quality Treatment and Testing Facility

- Objective: Develop, design and build a testing facility to provide total nitrogen treatment
- Several major tasks completed:
  - Cultural resources assessment survey; Phase I/II Environmental site assessments; Total nitrogen reduction technologies review; Topographic survey
- Others underway:
  - C- 43 water quality project plan development and design
- Next Step: Complete design of test cells

Construction Project
Spanish Creek/Four Corners

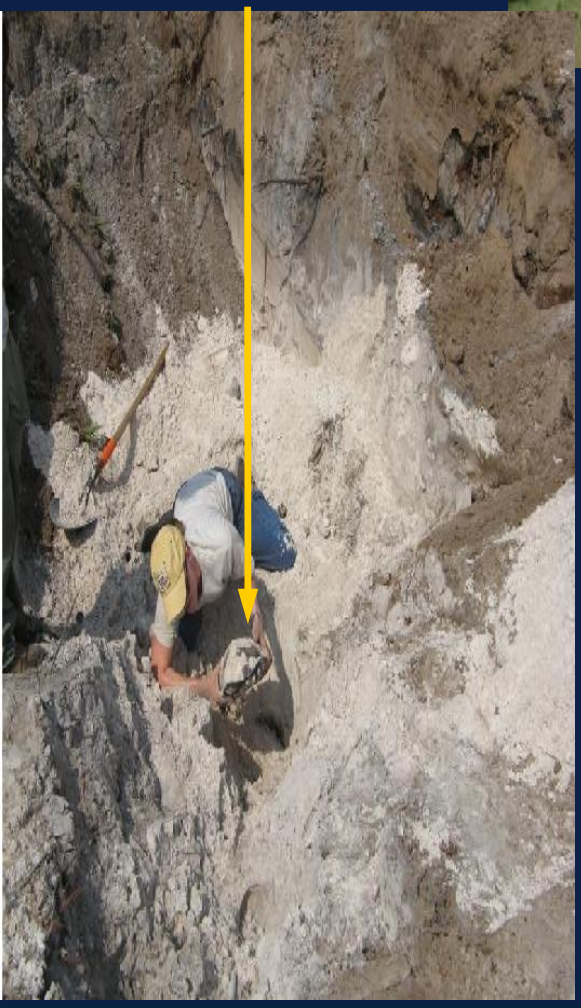
- The Spanish Creek Four Corners Project is a management measure of the Caloosahatchee River Watershed Protection Plan.
- The overall goal of this multi-phase restoration project is to provide flow-way restoration, water quality improvement, and aquifer recharge.
- Implementation of the larger restoration project is based on future funding opportunities.



County Line Ditch/Four Corners Phase I

CANAL CLEANING BY HENDRY COUNTY

TORTOISE RELOCATION



Construction Project
County Line Ditch/Four Corners Phase I

- Completed several major tasks under Phase I:
  - Installation of monitoring wells and staff gages
  - County Line Ditch Clearance south of CR-78 and associated gopher tortoise relocation
  - Topographic surveys to obtain cross sections of County Line ditch and associated infrastructure
- On- going efforts:
  - Gathering data from monitoring wells
- Next Steps:
  - Modeling of alternatives with the new survey data
    - Compare alternatives to improve the capacity of CLD to meet appropriate drainage goals
  - Future phases dependant on Legislature funding

Construction Project
Powell Creek Algal Turf Scrubber

- Pilot construction completed and operation began in October 08
- Data collection underway
  - Pilot unit is growing algae and generally working as expected
- Next steps- Completion of monitoring and final report by January 2010

Construction Project
5/5/5 projects with Martin County

- **Manatee Pocket Dredging:** Removal of accumulated muck for water quality and habitat improvement
  - Permits obtained; Gopher tortoise relocation completed
  - Contractor is secured for construction; Mobilization is expected to start in fall 2009.
- **Manatee Creek Basin Water Quality Retrofit:** Provides treatment of uncontrolled discharges to the Manatee Pocket from the Manatee Creek
  - Survey and redesign is complete.
  - Permits mostly completed.
  - Phase II land acquisition complete; Phase III project layout configured and all essential parcels obtained

Construction Project
5/5/5 projects with Martin County (Con't)

- **North River Shores Vacuum Sewer System-** Enhances water quality in the North Fork of the St. Lucie River by eliminating nutrient loading from septic systems
  - Permits and construction plans are complete
  - Project bid pricing request is sent out to vendors
  - Martin County staff plans on taking a final Assessment Resolution to the BOCC in October and construction will start shortly after.
- **Old Palm City Phase III Water Quality Retrofit-** Improves water quality through developing a neighborhood stormwater quality management system
  - Land acquisition was completed in April 2009 with the closing on the final three lots.
  - Acquisition of an additional two lots to increase the storage capacity of the project is currently under way.

C-44 Project

- Design completed; Land acquired
- USACE intends to construct C-44 Project in multiple contracts
  - Break apart existing plans and convert specifications to USACE format
- Contract 1
  - Construct Intake and C-132/C-133/C-133A Canals, Citrus Boulevard improvements, Bar B Ranch access, and Troup Indiantown Water Control District features
  - Construction start scheduled for September 2010 and last 2 years.
- Two additional contracts for Reservoir/Pump Station and STAs
  - All construction complete 2017

Research and WQ Monitoring Program
Research Projects

Research Topics	Project	CRE	SLE
Nutrient Budget	Measurements of Primary Production in CRE and SLE (Contract)	√	√
	Groundwater Seepage Studies in SLE and CRE (Contracts) *	√	√
Dissolved Oxygen Dynamics	SLE DO Data Analyses (In-House)		√
	CRE DO Data Collection (In-House)	√	
Low Salinity Zone	CRE Oligohaline Zone Study (Contract)	√	
Light Attenuation in San Carlos Bay	CRE Measurements of Colored Organic Matter (In-House)	√	
Integrated Modeling	SLE Water Quality Model update (In-House)		√
	SLE Opti6 Model Reconfiguration (In-House)		√

Research and WQ Monitoring Program

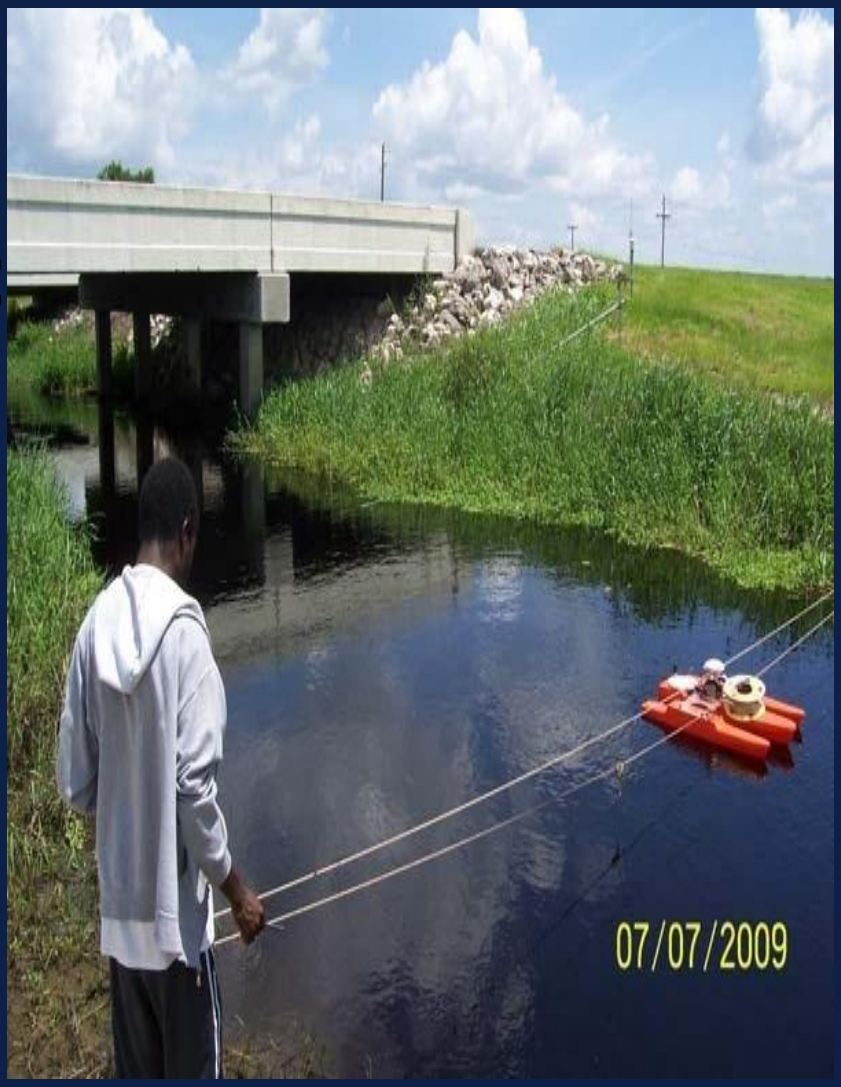
Synoptic Flow and WQ Monitoring- CRW

- Objectives:
  - Estimate the flow contribution from the tributaries, east of S-79, to the Caloosahatchee River's main stem, and, to validate the location of proposed long-term monitoring sites under CRWPP
  - Support source control program development for the freshwater portion of the watershed
- Wet season (May–September 2009) water quality and flow data collection
- Bi-weekly measurements at 16 sites

Research and WQ Monitoring Program

Synoptic Flow and WQ Monitoring- CRW

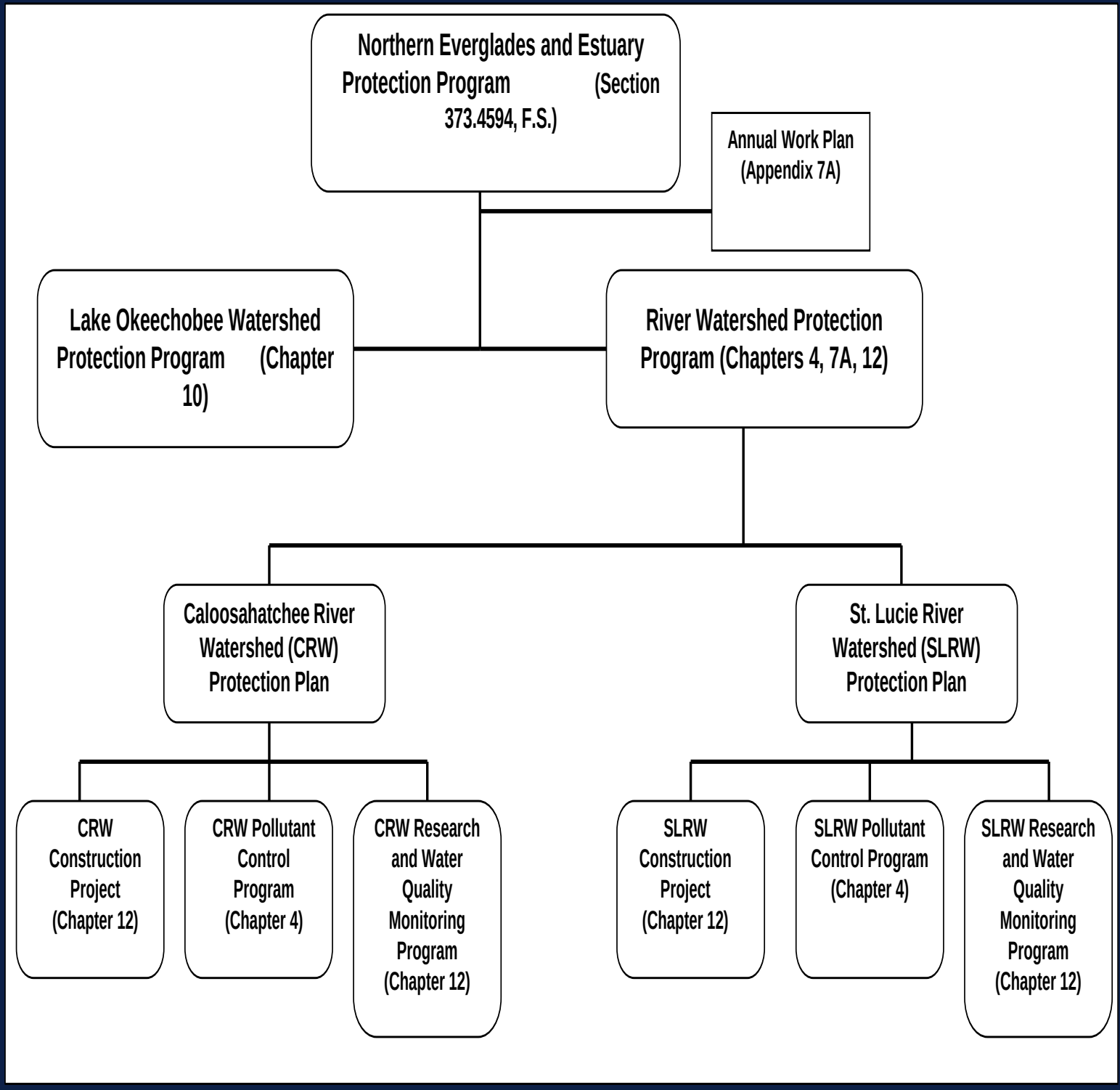
- Flow Measurements conducted using the ADCP
  - Acoustic Doppler Current Profiler mounted on an un-manned tri-maran boat hull (Riverboat)
- The Marsh-McBirney meter was used in shallow and very low-flowing channels
- Water Quality- Grab samples



Annual Reporting

- South Florida Environmental Report (SFER)
  - Status Updates of Projects
    - Included in several chapters in SFER
      - Lake Okeechobee Watershed (Chapter 10)
      - Caloosahatchee and St. Lucie River Watersheds (Chapter 12)
      - NE Source Control Program (Chapter 4)
  - Northern Everglades Annual Work Plan for FY2010 (Appendix 7A)
    - Includes projects undertaken by coordinating agencies

Annual Reporting- SFER



https://my.sfwmd.gov/northerneverglades

Questions

6. Working Lunch - 12:15 30m

7. Dispersed Storage and Treatment Update

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B. Florida Ranchlands Environmental Services Project Update - Sarah Lynch, Director, Agriculture, World Wildlife Fund

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- Public Comment 15m

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